Summary of Cancer Incidence and Mortality for Zip Codes 29379 (Union, SC) and 29364 (Lockhart, SC)

Cancer Incidence in Zip Codes 29379 and 29364

The first step in the analysis of cancer data for zip codes 29364 and 29379 was to look at the number of new cancer cases diagnosed in each zip code and compare this to the number of cancer cases expected in each zip code (see Tables 1 and 3). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of the zip code.

Table 1 shows what types of cancer occurred in zip code 29379 from 1996-1999, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected. A total of 391 new cases of cancer were diagnosed in the zip code, while 440 cases were expected. The most common types of cancer were lung, prostate, female breast, and colorectal cancers. These four types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis did not reveal any specific types of cancer where the number of new cases that occurred was significantly higher than expected.

Table 3 shows that fewer cases of cancer occurred in zip code 29364 than expected. A total of 14 cancer cases were diagnosed in the zip code, while 16 cases were expected. Specific cancer sites were not analyzed because of the small number of cases that occurred in the zip code. As a general rule, if a particular cancer site has less than 5 cases expected, then it is not analyzed because below this the numbers are considered too small to be statistically reliable.

Cancer Deaths in Zip Codes 29379 and 29364

To assess cancer deaths in these zip codes, cancer mortality data from 1996-2000 were used. This is the most current death data available. The same process used to analyze new cancer cases was also used to analyze cancer deaths. Tables 2 and 4 show the number of cancer deaths that occurred and the number expected in each zip code.

A total of 262 cancer deaths occurred in zip code 29379, while 273 deaths were expected. Therefore, fewer cancer deaths occurred than expected. The analysis did not reveal any specific types of cancer where the number of cancer deaths that occurred was significantly higher than expected.

Table 4 shows that 11 cancer deaths occurred in zip code 29364, while 9 cancer deaths were expected. Therefore, there were more cancer deaths than expected; however, this difference was not statistically significant.

Conclusions

To summarize, fewer cancer cases and deaths occurred in zip code 29379 than expected. No significant excesses are seen among specific types of cancer.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer, like brain, rather than more common cancers, like lung or prostate. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, there is no evidence of cancer clustering or of cancers resulting from environmental exposures in zip codes 29379 or 29364.

For questions about this report, please contact Laura Sanders at the SC Central Cancer Registry.

Report provided by:
SC Central Cancer Registry
Department of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201
Phone: (800) 817-4774 or (803) 898-3696

Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Vital Records and the Division of Biostatistics, SC Dept. of Health and Environmental Control.

10/11/02

Table 1. Analysis of New Cancer Cases in Zip Code 29379, 1996-1999

Cancer Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	64	70.3	0.91	0.57
Prostate	51	70.1	0.73	5.21
Breast (Female)	56	65.0	0.86	1.26
Colon/Rectum	51	52.9	0.96	0.07
Bladder	21	18.3	1.15	0.41
Non-Hodgkin's Lymphoma	16	14.3	1.12	0.19
Melanoma	11	13.8	0.80	0.57
Oral/Pharynx	9	12.1	0.74	0.81
Uterus	9	10.9	0.82	0.35
Kidney/Renal Pelvis	15	10.9	1.38	1.58
Pancreas	8	10.5	0.76	0.59
Leukemia	3	8.6	0.35	3.63
Ovary	6	7.3	0.82	0.25
Stomach	2	7.3	0.27	3.88
Esophagus	7	5.9	1.18	0.19
Brain/CNS	9	5.5	1.62	2.15
Cervix	5	5.5	0.91	0.05
Larynx	9	5.2	1.72	2.69
Multiple Myeloma	1	5.1	0.19	3.34
All Sites	391	439.8	0.89	5.42

Excludes in situ cases of cancer to allow for comparison.

Excludes cancer sites with less than 5 cases of cancer expected due to the unreliability of statistical tests based on small numbers.

*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201

September 12, 2002 lcs

Table 2. Analysis of Cancer Deaths in Zip Code 29379, 1996-2000

Cancer Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	75	78.1	0.96	0.12
Colon/Rectum	33	27.8	1.19	0.99
Breast (Female)	23	20.0	1.15	0.44
Prostate	12	18.9	0.63	2.53
Pancreas	16	15.3	1.04	0.03
Non-Hodgkin's Lymphoma	10	10.0	1.00	0.00
Leukemia	7	9.8	0.71	0.81
Stomach	1	7.0	0.14	5.12
Ovary	4	6.5	0.61	0.97
Multiple Myeloma	4	6.5	0.62	0.94
Esophagus	8	6.3	1.27	0.44
Brain/CNS	7	6.3	1.11	0.08
Bladder	10	5.5	1.81	3.63
Kidney/Renal Pelvis	6	5.5	1.09	0.05
Liver	6	5.2	1.16	0.13
Oral/Pharynx	5	5.0	1.01	0.00
All Sites	262	272.7	0.96	0.42

Excludes cancer sites with less than 5 cancer deaths expected due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of deaths is signficantly different from the expected number of deaths.
Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201
September 12, 2002 lcs

Table 3. Analysis of New Cancer Cases in Zip Code 29364, 1996-1999

Cancer Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-SquareTest*
All Sites	14	15.6	0.90	0.16

Excludes in situ cases of cancer to allow for comparison.
Excludes cancer sites with less than 5 cases of cancer expected due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

Table 4. Analysis of Cancer Deaths in Zip Code 29364, 1996-2000

Cancer Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-SquareTest*
All Sites	11	9.3	1.18	0.30

Excludes cancer sites with less than 5 cancer deaths expected due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of deaths is signficantly different from the expected number of deaths.

Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201
September 12, 2002 lcs